

CLAIMS

What is claimed is:

1. An apparatus for controlling modulation of an alternating waveform on a direct
2 current (DC) signal intended for a load, said apparatus comprising:

3 a DC power supply for providing a DC voltage; and

4 a mixing/switching circuit configured to add a modulating signal to said DC
5 voltage and to selectively allow said modulated DC voltage to supply said load,
6 wherein said mixing/switching circuit includes a common control signal input for
7 controlling said adding function and said selectively allowing function.

1 2. The apparatus of Claim 1, wherein said mixing/switching circuit includes a first
2 transistor and a capacitor for adding said modulating signal to said DC voltage.

1 3. The apparatus of Claim 2, wherein said first transistor is an NPN Darlington
2 transistor.

1 4. The apparatus of Claim 1, wherein said mixing/switching circuit includes a second
2 and third transistors, two resistors and two diodes for selectively allowing said modulated
3 DC voltage to supply said load.

1 5. The apparatus of Claim 4, wherein said second transistor is a PNP transistor and
2 said third transistor is an NPN transistor.

1 6. The apparatus of Claim 1, wherein said apparatus operates either in a modulation
2 mode or in a disconnect mode.

7. A low-noise block (LNB) control device capable of controlling modulation of an alternating waveform on a direct current (DC) voltage from a DC power supply to an LNB amplifier, said LNB control device comprising:

a power supply feedback line for receiving a power supply feedback signal from said DC power supply;

a power supply control line for sending a control signal to said DC power supply in response to said received power supply feedback signal;

an LNB amplifier feedback line for receiving a LNB amplifier feedback signal from said LNB amplifier; and

a modulating/switch control line for sending a modulating/switch control signal to a mixing/switching circuit in response to said received LNB amplifier feedback signal, wherein said modulating/switch control signal adds a modulating waveform to said DC voltage and selectively allows said modulated DC voltage to reach said LNB amplifier.

1 8. The LNB control device of Claim 7, wherein said mixing/switching circuit is
2 coupled between said DC power supply and said LNB amplifier.

1 9. The LNB control device of Claim 8, wherein said mixing/switching circuit is
2 configured to add a modulating signal to said DC voltage and to selectively allow said
3 modulated DC voltage to supply said LNB amplifier, wherein said mixing/switching circuit
4 includes a common control signal input for controlling said adding function and said
5 selectively allowing function.

1 10. The LNB control device of Claim 9, wherein said mixing/switching circuit includes
2 a first transistor and a capacitor for adding said modulating signal to said DC voltage.

1 11. The LNB control device of Claim 10, wherein said first transistor is an NPN
2 Darlington transistor.

1 12. The LNB control device of Claim 9, wherein said mixing/switching circuit includes
2 a second and third transistors, two resistors and two diodes for selectively allowing said
3 modulated DC voltage to supply said load.

1 13. The LNB control device of Claim 12, wherein said second transistor is a PNP
2 transistor and said third transistor is an NPN transistor.

1 14. The LNB control device of Claim 9, wherein said mixing/switching circuit operates
2 either in a modulation mode or in a disconnect mode.